




ICF international / Laboratory Data Consultants

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MEMORANDUM

TO: Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Task Order Manager (TOM) RF
Quality Assurance (QA) Program, MTS-3

FROM: Doug Lindelof, Data Review Task Manager 
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041
Technical Direction Form No.: 00105077 Amendment 3

DATE: September 18, 2007

SUBJECT: Review of Analytical Data, **Tier 2**

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Omega Chem OU2
Site Account No.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
Case No.:	36520
SDG No.:	Y3CJ1 and Y3CL1
Laboratory:	Shealy Environmental Services, Inc. (SHEALY)
Analysis:	Semivolatiles
Samples:	22 Ground Water Samples (see Case Summary)
Collection Date:	July 9 through 13 and 16, 2007
Reviewer:	Santiago Lee, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOM for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Cynthia Gurley, CLP PO USEPA Region 4
Steve Remaley, CLP PO USEPA Region 9

CLP PO: ☒ Attention ☒ Action

SAMPLING ISSUES: ☒ Yes ☐ No

00105077-8349/36520/Y3CJ1+L1-S-T2

Data Validation Report – Tier 2

Case No.: 36520
SDG No.: Y3CJ1 and Y3CL1
Site: Omega Chem OU2
Laboratory: Shealy Environmental Services, Inc.
Reviewer: Santiago Lee, ESAT/LDC
Date: September 18, 2007

I. CASE SUMMARY

Sample Information

Samples: (SDG Y3CJ1) Y3CJ1 through Y3CJ5, Y3CJ7 through Y3CK0, Y3CK2 through Y3CK5, and Y3CK7 through Y3CL0
(SDG Y3CL1) Y3CL1, Y3CL3, Y3CL7, Y3CL9, and Y3CM0
Concentration and Matrix: Low Concentration Water
Analysis: Semivolatiles
SOW: SOM01.1 and Modification Reference No. 1363.2
Collection Date: July 9 through 13 and 16, 2007
Sample Receipt Date: July 10 through 14 and 17, 2007
Extraction Date: (SDG Y3CJ1) July 11, 12, and 17, 2007
(SDG Y3CL1) July 17, 2007
Analysis Date: (SDG Y3CJ1) July 17 and 19, 2007
(SDG Y3CL1) July 19 and 20, 2007

Field QC

Field Blanks (FB): Not Provided
Equipment Blanks (EB): Not Provided
Trip Blank (TB): Not Provided
Background Samples (BG): Not Provided
Field Duplicates (D1): Y3CJ4 and Y3CJ5
Field Duplicates (D2): Y3CK9 and Y3CL0

Laboratory QC

Method Blanks & Associated Samples:
SBLK05: Y3CJ1 through Y3CJ5
SBLK60: Y3CJ7 through Y3CK0, Y3CK2 through Y3CK5, Y3CK2MS, Y3CK2MSD
SBLK58: Y3CK7 through Y3CL1, Y3CL3, Y3CL7, Y3CL9, Y3CM0

Tables

1B: Data Qualifier Definitions for Organic Data Review

CLP PO Action

Nondetected results for 4-chloroaniline, hexachlorocyclopentadiene, and 3,3'-dichlorobenzidine in sample Y3CJ5 are qualified as rejected (R) due to a very low deuterated monitoring compound (DMC) recovery (<10%; see Comment A).

CLP PO Attention

Results for benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene in sample Y3CJ3 are qualified as estimated (J) due to a low DMC recovery (see Comment B).

Sampling Issues

The sampler signature is missing on the traffic report & chain of custody record (TR/COC) for samples collected on 07/16/07 (see attached TR/COC, p. 7 in Y3CL1 data package).

Additional Comments

As directed by the TOM, a Tier 2 review (i.e., verify EXES R-flags, except where alternate non-rejected data exist. Where R-flags are removed, perform Tier 1A forms review and apply appropriate qualifiers) was performed. A Table 1A is not requested.

For SDG Y3CJ1, the following results were R-flagged by EXES:

(1) Results for all analytes in samples Y3CJ1 through Y3CJ5 and method blanks SBLK05 and SBLK60 because they "are associated with a opening and closing CCV that are not analyzed at the correct frequency." Form 5B (attached, p. 1129 in data package), however, indicated that both opening and closing continuing calibration verifications (CCVs) were analyzed within the 12-hour clock. Therefore, EXES R-flags were removed, a Tier 1A forms review was performed, and appropriate qualifiers were applied (see Comments A and B).

(2) Nondetected results for analytes associated with internal standards (IS) chrysene-d12 and perylene-d12 in sample Y3CJ7 due to IS "area counts are outside the lower limit of primary criteria." Form 8D (attached, p. 1136 in data package), however, indicated that area counts for IS chrysene-d12 and perylene-d12 in sample Y3CJ7 were within the range of 50.0% and 200% from the associated opening CCV (analyzed on 07/17/07 18:41). Therefore, EXES R-flags were removed and a Tier 1A forms review was performed; no qualification is needed since all method requirements were met.

For SDG Y3CL1, there were no EXES R-flags; therefore, a Tier 1A forms review was not performed.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services Volatile and Semivolatile Data Packages*;
- USEPA Contract Laboratory Program Statement of Work for Organics Analysis, *Multi-Media, Multi-Concentration*, SOM01.1, May 2005; and

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, January 2005.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	<u>Parameter</u>	<u>Acceptable</u>	<u>Comment</u>
1.	Holding Time/Preservation	Yes	
2.	GC/MS Tune/GC Performance	Yes	
3.	Initial Calibration	Yes	
4.	Continuing Calibration	Yes	
5.	Laboratory Blanks	N/A	
6.	Field Blanks	N/A	
7.	Deuterated Monitoring Compounds	No	A, B
8.	Matrix Spike/Matrix Spike Duplicates	N/A	
9.	Laboratory Control Samples/Duplicates	N/A	
10.	Internal Standards	Yes	
11.	Compound Identification	N/A	
12.	Compound Quantitation	N/A	
13.	System Performance	N/A	
14.	Field Duplicate Sample Analysis	N/A	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. Nondetected results for the following analytes are qualified as rejected due to a very low DMC recovery (<10%) and should be flagged "R".

- 4-Chloroaniline, hexachlorocyclopentadiene, and 3,3'-dichlorobenzidine in sample Y3CJ5

A recovery of 6% was reported for the DMC 4-chloroaniline-d4 in sample Y3CJ5, which is below the 10% limit specified in the ESAT Region 9 Standard Operating Procedure 901. Since results are nondetected, false negatives may exist. Sample Y3CJ5 was not reanalyzed.

Surrogates (e.g., deuterated monitoring compounds (DMCs)) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

B. Results for the following analytes are qualified as estimated due to a low DMC recovery and should be flagged "J".

- Benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene in sample Y3CJ3

A recovery of 26% was reported for the DMC benzo(a)perene-d12 in sample Y3CJ3, which is below the QC limit of 32-121%. Since results are nondetected, false negatives may exist. Sample Y3CJ3 was not reanalyzed.

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review," January 2005.

- U The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method.
- L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
- J The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
- R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.



USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 36520
DAS No:
SDG No: Y3CL1 Y3CL3 L

Date Shipped: 7/16/2007 Carrier Name: FedEx Airbill: 862063630622 Shipped to: Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	Chain of Custody Record		Sampler Signature:	For Lab Use Only Lab Contract No: EPW05031 Unit Price: Transfer To: Lab Contract No: Unit Price:	
	Relinquished By	(Date / Time)	Received By		(Date / Time)
	1	7-16-07 1600			
	2				
	3				
4			G. [Signature] 7/17/07 0940		

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No/ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
Y3CL9	Ground Water/ Robert Hernandez	L/G	BNA/1,4-Di (21), SIM TVOA (21)	182 (Ice Only), 183 (Ice Only), 184 (HCL), 185 (HCL), 186 (HCL), 187 (HCL) (6)	Y3CL9	S: 7/16/2007 10:00		OK ↓
Y3CM0	Ground Water/ Robert Hernandez	L/G	BNA/1,4-Di (21), SIM TVOA (21)	188 (Ice Only), 189 (Ice Only), 190 (HCL), 191 (HCL), 192 (HCL), 193 (HCL) (6)	Y3CM0	S: 7/16/2007 11:10		
Y3CM1	Ground Water/ Robert Hernandez	L/G	SIM TVOA (21)	196 (HCL), 197 (HCL), 198 (HCL), 199 (HCL) (4)	Y3CM1	S: 7/16/2007 12:30		
Y3CM2	Ground Water/ Robert Hernandez	L/G	SIM TVOA (21)	200 (HCL), 201 (HCL), 202 (HCL), 203 (HCL) (4)	Y3CM2	S: 7/16/2007 13:00		

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 48	Chain of Custody Seal Number: NA
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? X	Shipment Iced? X
BNA/1,4-Di = BNA/1,4-Dioxane, SIM TVOA = CLP TCL Volatiles (including SIM)				

TR Number: 9-373659945-071607-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

LABORATORY COPY

5B - FORM V SV
SEMIVOLATILE ORGANIC INSTRUMENT
PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

EPA SAMPLE NO.

DFTPP17

Lab Name: Shealy Environmental Services, Inc.

Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 36520

Mod. Ref No.: _____ SDG No.: Y3CJ1

Lab File ID: 11071701

DFTPP Injection Date: 07/17/2007

Instrument ID: MSD11

DFTPP Injection Time: 0851

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	39.8
68	Less than 2.0% of mass 69	0.7 (1.6) 1
69	Mass 69 relative abundance	44.2
70	Less than 2.0% of mass 69	0.3 (0.6) 1
127	10.0 - 80.0% of mass 198	50.1
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.7
275	10.0 - 60.0% of mass 198	23.6
365	Greater than 1.0% of mass 198	3.2
441	Present, but less than mass 443	8.7
442	50.0 - 100% of mass 198	58.2
443	15.0 - 24.0% of mass 442	11.8 (20.3) 2

1-Value is %mass 69

2-Value is %mass 442

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD02017	SSTD02017	11071702	07/17/2007	0905
02	SBLK05	IQ60505-001	11071703	07/17/2007	0941
03	Y3CJ1	IG10025-001	11071704	07/17/2007	1004
04	Y3CJ2	IG10025-002	11071705	07/17/2007	1027
05	Y3CJ3	IG10025-003	11071706	07/17/2007	1050
06	Y3CJ5	IG10025-005	11071708	07/17/2007	1137
07	Y3CJ4	IG10025-004	11071710	07/17/2007	1224
08	SBLK60	IQ60560-001	11071720	07/17/2007	1619
09	SSTD0201J	SSTD0201J	11071726	07/17/2007	1841
10	Y3CK3	IG12023-002	11071728	07/17/2007	1928
11	Y3CK4	IG12023-003	11071729	07/17/2007	1952
12	Y3CK5	IG12023-004	11071730	07/17/2007	2015
13	Y3CJ7	IG11030-001	11071731	07/17/2007	2039
14	Y3CJ8	IG11030-002	11071732	07/17/2007	2102
15	Y3CJ9	IG11030-003	11071733	07/17/2007	2125
16	Y3CK0	IG11030-004	11071734	07/17/2007	2149
17	SSTD0201K	SSTD0201K	11071736	07/17/2007	2235
18					
19					
20					
21					

8D - FORM VIII SV-2
SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Shealy Environmental Services, Inc.

Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 36520

Mod. Ref No.: _____ SDG No.: Y3CJ1

EPA Sample No. (SSTD020##): SSTD0201J

Date Analyzed: 07/17/2007

Lab File ID (Standard): 11071726

Time Analyzed: 1841

Instrument ID: MSD11

GC Column: DB-5.625MS ID: 0.18 (mm)

	IS4 (PHN)		IS5 (CRY)		IS6 (PRY)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	637316	8.440	473847	10.740	238170	12.560
UPPER LIMIT	1274632	8.943	947694	11.236	476340	13.063
LOWER LIMIT	318658	7.943	236924	10.236	119085	12.063
EPA SAMPLE NO.						
01 SBLK05	848075	8.440	571930	10.730	258520	12.560
02 Y3CJ1	699543	8.440	449682	10.730	224480	12.550
03 Y3CJ2	774971	8.440	508634	10.730	234984	12.560
04 Y3CJ3	717858	8.440	487610	10.730	231164	12.550
05 Y3CJ4	1055251	8.440	747476	10.730	340650	12.560
06 Y3CJ5	852370	8.440	636293	10.730	166460	12.550
07 SBLK60	1576802	8.450	1063051	10.740	477455	12.580
08 Y3CJ7	489710	8.440	322652	10.730	148003	12.550
09 Y3CJ8	815383	8.440	560126	10.730	194480	12.560
10 Y3CJ9	827387	8.440	519588	10.730	225773	12.560
11 Y3CK0	672690	8.440	446056	10.730	205839	12.550
12 Y3CK3	545603	8.440	341676	10.730	174220	12.550
13 Y3CK4	529082	8.440	363561	10.730	194979	12.560
14 Y3CK5	758456	8.440	522833	10.730	256391	12.560
15						
16						
17						
18						
19						
20						
21						
22						

IS4 (PHN) = Phenanthrene-d₁₀

IS5 (CRY) = Chrysene-d₁₂

IS6 (PRY) = Perylene-d₁₂

AREA UPPER LIMIT = 200% internal standard area

AREA LOWER LIMIT = 50% internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT

RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside contract required QC limits with an asterisk.